

What is claimed is:

1. A passive touch system comprising:  
a passive touch surface;  
at least two cameras associated with said touch surface, said at least  
two cameras acquiring images of said touch surface from different locations and  
having overlapping fields of view; and  
a processor receiving and processing images acquired by said at least  
two cameras to detect the existence of a pointer therein and to determine the location  
of said pointer relative to said touch surface.
2. A passive touch system as defined in claim 1 wherein said at least two  
cameras are two-dimensional image sensor and lens assemblies having fields of view  
looking along the plane of said touch surface.
3. A passive touch system as defined in claim 2 wherein said processor  
determines the location of said pointer relative to said touch screen using  
triangulation.
4. A passive touch system as defined in claim 3 wherein said processor  
determines when the pointer is in contact with said touch surface and when said  
pointer is hovering above said touch surface.
5. A passive touch system as defined in claim 2 wherein said processor  
selects pixel subsets of images acquired by said image sensor and lens assemblies and  
processes said pixel subsets to determine the existence of said pointer.
6. A passive touch system as defined in claim 5 wherein said pixel  
subsets are determined during an alignment routine.
7. A passive touch system as defined in claim 2 wherein said processor  
includes a digital signal processor associated with each image sensor and lens  
assembly and a master digital signal processor in communication with the digital  
signal processors associated with each image sensor and lens assembly, the digital

Sub  
a1

005000-13407960

Sub  
a3

Sub  
a3

24

associated with each  
processing the pixel  
of the digital signal pro  
cessors associated  
with each characteristic

10

15

touch system  
rolls the d  
for the P  
s acquire

17

67

30

25

14. The method of claim 13 wherein during said acquiring step, said images are acquired using two-dimension image sensor and lens assemblies having fields of view looking along the plane of said touch surface.

5 15. The method of claim 14 wherein during the processing step, the location of said pointer relative to said touch screen is determined using triangulation.

Sub a1 16. The method of claim 15 wherein during said processing step, the images are processed to determine when said pointer is in contact with said touch surface and when said pointer is hovering above said touch surface.

17. The method of claim 16 further comprising the step of selecting pixel subsets of images acquired by said image sensor and lens assemblies prior to processing said images.

Sub a8 18. The method of claim 17 wherein during said processing step the existence of said pointer is determined by calculating median lines of the pointer and wherein the location of said pointer is determined by calculating the intersection point of median lines and using triangulation to determine the coordinates of said intersection point.

20

005020-18407960

add a9